

Unit 2

Day 3

Section 1.7

Addition and Subtraction of Radicals

1)

$$\sqrt[4]{80} - 4\sqrt[4]{405} + 2\sqrt[4]{5}$$

$$\sqrt[4]{16 \cdot 5} - 4\sqrt[4]{3^4 \cdot 5} + 2\sqrt[4]{5}$$

$$2\sqrt[4]{5} - 4 \cdot 3\sqrt[4]{5} + 2\sqrt[4]{5}$$

$$2\sqrt[4]{5} - 12\sqrt[4]{5} + 2\sqrt[4]{5} \\ - 8\sqrt[4]{5}$$

2)

$$\frac{1}{\sqrt[3]{16}} + \frac{-3}{\sqrt[3]{128}} - \frac{4}{\sqrt[3]{250}}$$

$$\left( \frac{10}{2\sqrt[3]{2}} \right) + \left( \frac{-15}{4\sqrt[3]{2}} \right) - \left( \frac{16}{5\sqrt[3]{2}} \right)$$

$$\frac{10}{20\sqrt[3]{2}} + \frac{-15}{20\sqrt[3]{2}} - \frac{16}{20\sqrt[3]{2}} =$$

$$\frac{-21}{20\sqrt[3]{2}} \cdot \frac{\sqrt[3]{2^2}}{\sqrt[3]{2^2}} = \frac{-21\sqrt[3]{4}}{40}$$

3)

$$(\sqrt{6} - \sqrt{3})(\sqrt{6} + \sqrt{3})$$

$$6 + \sqrt{18} - \sqrt{18} - 3$$

6-3  
3

4)  $(\sqrt[3]{5} - 2)(\sqrt[3]{5^2} + 2\sqrt[3]{5} + 4)$

$$\begin{array}{r} 5 + 2\sqrt[3]{5^2} + 4\sqrt[3]{5} \\ - 8 - 2\sqrt[3]{5^2} - 4\sqrt[3]{5} \\ \hline \end{array}$$

$-3$

5)

$$(2\sqrt{5} - \sqrt{2})(5\sqrt{2} + \sqrt{5})$$

$$10\sqrt{10} + 10 - 10 - \sqrt{10}$$

$$10\sqrt{10} - \sqrt{10}$$

$$\underline{9\sqrt{10}}$$

## Method 1

$$6) \quad \overbrace{(\sqrt{3} - \sqrt{2})}^a \overbrace{(\sqrt{3} + \sqrt{2})}^b \quad \text{ }^2$$

$$\left[ (\sqrt{3} - \sqrt{2})(\sqrt{3} + \sqrt{2}) \right]^2$$

$$(3 - 2)^2$$

$$1^2 = 1$$

$$a^2 b^2 = (ab)^2$$

6)

Method 2

$$(\sqrt{3} - \sqrt{2})^2 (\sqrt{3} + \sqrt{2})^2$$

$$(\sqrt{3} - \sqrt{2})(\sqrt{3} - \sqrt{2})(\sqrt{3} + \sqrt{2})(\sqrt{3} + \sqrt{2})$$

$$(\sqrt{3} - \sqrt{2})(\sqrt{3} + \sqrt{2})(\sqrt{3} - \sqrt{2})(\sqrt{3} + \sqrt{2})$$

$$(3 - 2)(3 - 2)$$

$$1 \cdot 1 = 1$$



Homework:

Day 3